

Methods of Testing Plated and Oxide Coatings. (Werner.) See p. 268.

*Aluminum and Chromium Deposits Obtained from the Vapour of Their Salts. F. M. Narkisov (*Dokl. Akad. Nauk S.S.S.R. (Compt. rend. Acad. Sci. U.R.S.S.)*, 1939, 22, (8), 321-325 (in Russian); and *Compt. rend. (Inklyud.) Acad. Sci. U.R.S.S.*, 1939, [N.S.], 22, (8), 318-322 (in English)).—Experiments on the production of deposits on 0.1% carbon steel, from the chlorides of aluminum and chromium, continued for 1 hrs. at 850°, 1000°, and 1150° C. led to the formation of deposits of aluminum 0.037, 0.250, and 0.026 mm. thick and of chromium 0.032, 0.108, and 0.253 mm. thick, respectively. An explanation is given of the structure and the process of formation of the deposits. N. A.

colloids-Electrochem. Inst., AS USSR

ASAC-VLA METALLURGICAL LITERATURE CLASSIFICATION

BC

71

Effect of the nature of the solvent on the process of electrocrystallization of silver. E. N. SARKISOV (Compt. rend. Acad. Sci. U.R.S.S., 1939, 23, 676-682).—Using 0.25N AgNO₃ in H₂O, MeOH, EtOH, and C₂H₅N, the change in the no. of Ag crystal centres forming on a Pt cathode during electrocrystallization has been investigated. The product of the no. of centres and the dielectric const. of the solvent, for all except C₂H₅N, is const. The great affinity of C₂H₅N for AgNO₃ mols. explains the observed deviation from regularity for C₂H₅N solutions. W. R. A.

ASH-15A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTIES INDEX																																																																																																															
<i>m</i> 7 *Aluminum-Chromium and Chromium-Silver Coatings Produced from the Vapours of the Corresponding Metal Salts. N. A. Izgaryshev and E. S. Sarkisov (<i>Compt. rend. (Doklady) Acad. Sci. U.R.S.S.</i>, 1940, (N.S.), 27, 457-459; <i>Chem. Zentr.</i>, 1940, 111, (11), 3699).—<i>Chem. Abstr.</i>, 1934, 5, 680, 6001. Very stable, heat-resistant, bright aluminium coatings may be prepared on iron surfaces at temperatures between 950° and 1000° C. by the action of $AlCl_3$ vapour. To eliminate the technical difficulties which arise during the process in consequence of the low melting point of aluminium, experiments were carried out to coat the iron simultaneously with aluminium and chromium, or with chromium and silver, these alloys having far higher melting points. The alloy, consisting of 60% chromium and 40% aluminium (melting point 1000° C.), was transformed into the corresponding chlorides by the action of HCl, which yield iron-chromium-aluminium alloys—at temperatures 950°–1100° C.—on the surface of the iron specimen to be coated. The thickness of the bright coatings is proportional to the time and the temperature of the treatment. Heat-resistance tests on the iron specimens coated at 1100° C. (by treatment with illuminating gas for 10 hrs. at 1050° C.) show a mean loss of weight of only 0.0013 gm./cm.². To coat simultaneously with silver and chromium, the corresponding metal-chloride vapours have been generated at 950° C. from a mixture of equal parts of $AgCl$ and chromium, which interact with the iron to form a bright protective coating of golden colour. The thickness of the coating was 0.183 mm. after treatment for 2.5 hrs. at 950° C. The coatings are very adherent to the iron. Corrosion tests of coatings showed no alteration of the specimens after treatment with 3% $NaCl$ for 10 days, whereas unprotected specimens were already badly corroded after the first hour of the test.																																																																																																															
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<table border="1"> <thead> <tr> <th colspan="13">101001-101001</th> <th colspan="13">101001-101001</th> </tr> </thead> <tbody> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td> <td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td> <td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>																										101001-101001													101001-101001													1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																														
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<i>M</i> *Heat Resistance of Vapour Coatings of Chromium. E. S. Barkisov (Sverdlovsk. Akad. Nauk Grazinskiy S.S.R., 1942, 8, 1043-1048; C. ABZ, 1947, 41, 3031).— [in Russian]. <i>Cy. Met. Abs.</i>, 1946, 18, 214. Low-carbon steel samples treated in chromium chloride vapour at 900° and 1000° C. for 3 hr. become coated with a film containing about 15% chromium over a depth of about 0.2 mm., 30-35% chromium in the outer 0.1 mm. They are found to exhibit a high degree of heat resistance to corrosion at 900° C. in tests involving alternate heating for 6-10 hr. and cooling with free access of air for a total of 100 hr. The rate of increase of weight is max. during the first 6-15 hr. (0.387 and 0.300 g./m.²/hr. for samples coated at 900° and 1000° C., respectively) and drops to 0.077 and 0.057 g./m.²/hr., respectively, at the end of 100 hr. The weight is very nearly const. from about 25-30 hr. on. This compares very favourably with a 30% chromium steel. A vapour-chromium-coated steel wire burned out at 1445° C. as compared with 1150° C. for the untreated steel wire, and 1480° C. for Nichrome wire. The heat resistance is much less satisfactory at 1000° C., where the coating tends to crack. At temp. higher than 900° C., alloy coatings produced from mixed vapours of chromium and aluminium chlorides at 1000°, 1050°, and 1100° C. (3 hr.) afford a much higher degree of protection, film thicknesses of 0.174, 0.380, and 0.785 mm., respectively, being attained, as against 0.095, 0.100, and 0.223 mm. with chromium alone. With Fe-Al-Cr films, the rate of increase of weight at 1000° C. is not over 1 g./m.²/hr. <i>7</i>																									
ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION																									
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PROCESSIES AND PROPERTIES INDEX																									
<i>Heat-Resistance of Chromium Coatings Deposited [on Steel] from the Vapours of Its Salts. P. S. Sarkisov (Stal, 1943, 3, (3/4), 40-41; C. Abs., 1944, 38, 322). [In Russian.] Specimens of steel and of iron were chromium-coated by a method outlined previously (cf. Met. Abs., 1944, 11, 40). The heat-resistance of the chromium-coated specimens was tested at 900° and 1000° C. For purposes of comparison, untreated samples were subjected to similar tests. The tested specimens were pulled from the furnace at intervals of 6-10 hr., cooled, weighed, and replaced in the furnace. The increase in weight was taken as an indication of the degree of oxidation. The entire run lasted 100 hr. The results show that steel and iron coated with chromium by the above method are corrosion-resistant at low as well as at high temperatures. The tested specimens were more resistant at 900° C. than at 1000° C. Simultaneous coatings with chromium and aluminium rendered the samples more resistant at temperatures above 900° C.</i>																									
AS - SLA METALLURGICAL LITERATURE CLASSIFICATION																									
Source: 330-03137																									

CA

Structure of "vapor-chromium" coatings on iron and steel. R. S. Sarkisov and N. A. Izgaryshev. *J. Phys. Chem.* (U.S.S.R.) 18, 143-6(1944); cf. *C.A.* 37, 5634'.—Coatings produced by heating Fe in the vapor of CrCl₃ and CrCl₄ contain Cr carbides if the Fe contains more than 0.2% of C. The formation of carbides is reduced if steel contains, e.g., 3% of Cr. Electron diffraction shows that the surface of the coating consists of γ-Cr. Analysis indicates Cr concn. = 36% 0.02 mm. under the surface, and about 1% 0.2 mm. under the surface. Coatings on polished steel are nonporous. B. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS

cd
2

Interatomic distances in crystals and the Hume-Rothery formula. R. S. Sarkisov. *Compt. rend. acad. sci. U.R.S.S.* 55, 727-30(1947)(in English).—An examn. of the relation between the interat. distance (d) and the principal quantum no. (n) as well as the at. no. of the element (Z) shows that $Z_{eff} = Z^{1/2}$ plays a fundamental role and helps explain the ratios $1/Z$, $1/Z^2$, $1/Z^3$, $1/Z^4$, etc. in the Hume-Rothery formula not only for elements of subgroup A but also for those in subgroup B, for which a relation has not yet been established. The formula derived for elements of subgroup A is given as $d = C_A/(Z_{eff}^{-1} + 1)$ (1), and for subgroup B elements, $d = C_B Z_{eff}^{-2}$ (2), where C_A and C_B are const. within a single period. Values for 40 elements calcd. with (1) and (2) show very good agreement with the at. radii in metallic crystals given by Goldschmidt (*C.A.* 21, 3408). The quantity $Z^{1/2}$ is believed to be a measure of the effective no. of charges on the nucleus, in whose field are the free electrons responsible for the linkage between the atoms. The av. statistical distribution (in time and space) of the electron d , within the framework of an atom may be such that all the "inner" electrons ($Z - Z^{1/2}$) contribute to the screening of the nucleus field, whereas the "surface" electrons ($Z^{1/2}$) are not involved in the screening action. Frank Conet

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION
6-27 JPL LIT

FROM STIVALS

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FROM BOWLING

SERIALIZED ☐ INDEXED ☐ FILED ☐

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CH

2

Calculation of atomic radii in crystals. E. S. Sarkisov. *Doklady Akad. Nauk S.S.S.R.* 38, 1337-40(1947). Interpolation formulas for the at. radii in the elementary state have already been proposed (cf. C.A. 41, 6786). The disadvantage of these formulas is the appearance of parameters that vary with the period of the element in the periodic classification. The following new formulas are given: $R_A = 1.10 Z^{1/2} N^{1/2}$ and $R_B = 1.10 Z^{1/2} / (8 - N)^{1/2}$, in which N is the no. of valence electrons. For 70% of all elements the values thus obtained deviated from the Goldschmidt radii (12 coordination) by less than 10%. Calculation of the interatomic distances in metals and their alloys. *Ibid.* 1045-8. The following formula was used for the calcn. of the at. distance d in alloys: $d = 2 \times 1.10 a(pZ_A^{1/2} + p_Z Z_A^{1/2}) / (p_A f_A + p_Z f_Z)^{1/2}$, p is the at. fraction of the alloying partner, Z is the nuclear charge, f is the no. of free electrons (for group A elements f is equal to the no. of valence electrons, N ; for group B elements, $f = 8 - N$), and a varies with the coordination no. in the sense of a correction given by Goldschmidt. Values of a are given for various lattice types. Interat. distances were calcd. for over 100 alloy phases. Most of them deviated less than 5% from the observed values. Through *Chem. Zentr.* 1948, II, 670.
M. G. Moore.

137 AND 138 ORDERS
PROCESSING AND PROPERTY INDEX
139 AND 139 ORDERS

COMMON ELEMENTS
COMMON VARIABLE POSIT

Ca

2

Lanthanide contraction and interatomic distances.
 E. S. Bartholomew. *Doklady Akad. Nauk S.S.S.R.* 60, 371-4 (1948); cf. C.A. 41, 6789d. — The formula for calcul. of atomic radii is $R = C(f/f)^{1/4}$ (cf. *Ibid.*, 56, No. 7 (1947)) [where C = universal const., numerically equal to the radius of H = 1.18, f = no. of bonding electrons (equal to the no. of valence electrons N in the case of elements of the main groups, and to $8 - N$ in the case of elements of the subgroups), F = no. of electrons not involved in the screening of the field of the nucleus]. This formula holds fairly satisfactorily (max. deviation from Goldschmidt's data not over $\pm 5\%$ in 90% of the cases) for all elements up to La, if the magnitude F is simply put = $Z^{1/4}$ (Z = at. no.). This simple expression of the mutual repulsion of electrons fails in the case of the rare elements, the at. radii calcul. with the aid of the simple formula being systematically at variance with Goldschmidt's values by about $\pm 10\%$. Agreement is reached if F is corrected by a term $s^{1/4}$, where s = no. of the deep-shell $4f$ electrons, i.e. putting $F = Z^{1/4} - s^{1/4}$. From Ce to Cp, s increases from 1 to 14 and then remains const. at 14. The calcul. lanthanide contraction is 9%, in agreement with Goldschmidt (C.A. 21, 2980). The same correction of F should be applied in the calcul. of interat. distances in face-centered cubic alloys by E.'s formula (*Ibid.*, 56, No. 5 (1947)); application of the correction term $s^{1/4}$ leads to excellent agreement in the case of PtCu, NaPb, CaPb, SrPb, AuCu, and PtCu.

N. Thon

139 AND 139 ORDERS
140 AND 140 ORDERS

COMMON ELEMENTS
COMMON VARIABLE POSIT

Ca

2

Lanthanide contraction and interatomic distances.
 E. S. Bartholomew. *Doklady Akad. Nauk S.S.S.R.* 60, 371-4 (1948); cf. C.A. 41, 6789d. — The formula for calcul. of atomic radii is $R = C(f/f)^{1/4}$ (cf. *Ibid.*, 56, No. 7 (1947)) [where C = universal const., numerically equal to the radius of H = 1.18, f = no. of bonding electrons (equal to the no. of valence electrons N in the case of elements of the main groups, and to $8 - N$ in the case of elements of the subgroups), F = no. of electrons not involved in the screening of the field of the nucleus]. This formula holds fairly satisfactorily (max. deviation from Goldschmidt's data not over $\pm 5\%$ in 90% of the cases) for all elements up to La, if the magnitude F is simply put = $Z^{1/4}$ (Z = at. no.). This simple expression of the mutual repulsion of electrons fails in the case of the rare elements, the at. radii calcul. with the aid of the simple formula being systematically at variance with Goldschmidt's values by about $\pm 10\%$. Agreement is reached if F is corrected by a term $s^{1/4}$, where s = no. of the deep-shell $4f$ electrons, i.e. putting $F = Z^{1/4} - s^{1/4}$. From Ce to Cp, s increases from 1 to 14 and then remains const. at 14. The calcul. lanthanide contraction is 9%, in agreement with Goldschmidt (C.A. 21, 2980). The same correction of F should be applied in the calcul. of interat. distances in face-centered cubic alloys by E.'s formula (*Ibid.*, 56, No. 5 (1947)); application of the correction term $s^{1/4}$ leads to excellent agreement in the case of PtCu, NaPb, CaPb, SrPb, AuCu, and PtCu.

N. Thon

139 AND 139 ORDERS
140 AND 140 ORDERS

COMMON ELEMENTS
COMMON VARIABLE POSIT

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

2

C A

Calculation of the interatomic distances of inert gases in the crystalline state. B. S. Sarkisov. *Doklady Akad. Nauk S.S.S.R.* 62, 231-4 (1948); cf. C.A. 41, 6780i. -- For a given element, the above-mentioned distance $d = d_0 \cdot (F/f)^{1/3}$, where the expl. value of d_0 can be used for all inert gases crystg. in the edge-centered hexagonal system, and F is the period to which the element belongs in the Mendeleev table. If N is the max. no. of valence electrons, $f = N$ for the A subgroups, and $f = 8 - N$ for the B subgroups, except that $f = 2 - N$ for H and He. Calcd. and observed values agree to within ~3% for H, N, O, He, Ne, Ar, Kr, and Xe; the calcd. value for Rn is 4.43 Å. A helical form of the periodic table is suggested, based on cryst. properties of the elements. C. F.

458-55A METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
6093 On Mendeleev's Periodic Table of Elements. E. S. <u>Sapozhnik</u>, <u>Zhur. Fiz. Khim.</u> 24, 487-502(1950) April (in Russian). In the author's opinion the large number of periodic tables of elements, presented by various writers in recent years, distort the natural classification given by Mendeleev. The author's universal equations for atomic radii R and atom distances d in crystals confirm quantitatively the rationality of Mendeleev's groups and subgroups. If C_1 and C_2 are constants, n the group number, and F a function of the atomic number, then $R = C_1(F/n)^{1/3}$ and $d = C_2(F/n)^{1/3}$. For all elements except the lanthanides (and possibly the actinides), $F = Z^2$. The deviations shown by the rare earths (interatomic contractions) are quantitatively explained by a corrected expression for F reflecting the gradual filling of the 4f shell, these considerations agree with the findings of Hevesy on molecular contractions in lanthanide sulfates (<u>Z. anorg. u. allgem. Chem.</u> 147, 217; and 150, 68(1925)) and with those of Goldschmidt (<u>Ber.</u> 80, 1282(1927)) and Bommer (<u>Z. anorg. u. allgem. Chem.</u> 241, 273(1939)) on similar phenomena in lanthanide oxides X_2O_3.																			
<i>Digest - W-14931, 6 Nov 50</i>																			
ASD-SCA METALLURGICAL LITERATURE CLASSIFICATION																			
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									

C A

2

Structure of organic molecules and bond length. E. S. Surkisov, *Zhur. Fiz. Khim.* 25, 624-34(1951).—As a 1st approximation, it is assumed that the length, r , of a bond between atoms 1 and 2 in a mol. is detd. by the interactions of the valence electrons with one another and with the electrons of the core of 1 and 2. From semiempirical considerations similar to those used in connection with bond length in metallic crystals (C.A. 42, 7114a; 44, 8170h), a formula is proposed: $r = c(F_1^{1/2} \times F_2^{1/2} + F_1^{1/2})/(F_1 + F_2)^{1/2}$, where $c = 0.34$ Å., practically equal to the 11 Bohr radius, F_1 and F_2 are the nos. of valence electrons of atoms 1 and 2 taking part in the bonding, $F_1 = (F_1 + F_2)^{1/2}$, $F_2 = (Z_1 - F_{1max})^{1/2} - n^{1/2}$, Z_1 being the total no. of electrons of element 1, F_{1max} the max. no. of valence electrons of 1 used in bonding in the mol., n the total no. of s and p electrons in the external unfilled electron shell (e.g., $n = 0$ for the halogens, $n = 2$ for N). The formula gives good agreement ($\pm 0.02 - 0.03$ Å.) with exptl. data (mostly from Wheland's book) for a large no. of org. compds. In C_2H_2 , it is assumed that $F_1 + F_2$ for the C—C bond is equal to 3. The concept of resonance is not necessary. For instance, from the classical formula for methylazide, $CH_3-N=N=N$, the calcd. bond lengths are, resp., 1.47, 1.24, and 1.12 for C—N, N=N, and N=N; whereas the exptl. data give 1.47, 1.24, and 1.10. Nonadditivity features are beyond the scope of this work.

Michel Boudart

SARKISOV, E. S.

01. p.m.2

✓ Mass of atomic nuclei and a periodicity law. II. E. S. Sarkisov, Zhur. Fis. Khim. 26, 10-26 (1952).—It was shown in Part I (Zhur. Fis. Khim. 25, 1415 (1951)) that most of the properties of stable nuclei could be represented as periodic functions of the mass no. The periodicity was related to a shell-structure of the nucleus. External nucleons in incomplete shells and a core of closed shells were distinguished; both were considered as quantized systems with discrete energy levels. This classification, a "periodic system of the nuclei", is now extended to include all the unstable isotopes. A total of 27 large periods is distinguished; each period is again subdivided into several small periods and groups. Complete tables of this "periodic system" are given. The known nuclei of lowest and highest mass no. in the large periods are: (I) $n^1(\beta^-)$, $Cu^{64}(\beta^-)$; (II) $Ni^{57}(\beta^-)$, $Se^{78}(\beta^+)$; (III) $K^{39}(\beta^-)$, $Se^{74}(K)$; (IV) $Ca^{40}(\beta^-)$, $Te^{130}(\beta^+)$; (V) $Ni^{58}(\beta^-)$, $Sn^{118}(K)$; (VI) $Zn^{64}(\beta^-)$, $In^{115}(\beta^+)$; (VII) $Ge^{72}(\beta^-)$, Sn^{114} ; (VIII) $Ge^{76}(\beta^-)$, $Te^{132}(K)$; (IX) $Se^{78}(\beta^-)$, Xe^{136} ; (X) $Kr^{84}(\beta^-)$, Bi^{209} ; (XI) $Kr^{86}(\beta^-)$, Sn^{116} ; (XII) $Kr^{88}(\beta^-)$, $Tb^{159}(K)$; (XIII) $Sn^{118}(\beta^-)$, Dy^{164} ; (XIV) $Sn^{120}(\beta^-)$, Er^{162} ; (XV) $Sn^{122}(\beta^-)$, $Lu^{175}(\beta^+; K)$; (XVI) $Sn^{124}(\beta^-)$, $W^{184}(K)$; (XVII) $Te^{130}(\beta^-)$, $Bi^{210}(\alpha; K)$; (XVIII) $Xe^{136}(\beta^-)$, $Bi^{212}(\alpha; K)$; (XIX) W^{186} , $Po^{210}(\alpha; K)$; (XX) Os^{190} , $At^{210}(K; \alpha)$; (XXI) Pt^{194} , $At^{210}(K)$; (XXII) Hg^{196} , $At^{210}(\alpha; \beta^-)$; (XXIII) $Ac^{227}(\beta^-)$, $Cm^{247}(\alpha)$; (XXIV) $Ti^{48}(\beta^-)$, $Cm^{248}(\alpha; K)$; (XXV) $Ra^{226}(\beta^-)$, $Cm^{250}(\alpha)$; (XXVI) $Md^{258}(\beta^-)$, $Bk^{247}(K)$; (XXVII) $U^{238}(\beta^-)$, $Am^{241}(\alpha)$. The properties of β - and α -radioactive nuclei are discussed in sep. sections; they are related to the position of the nucleus in the period. Unstable nuclei as yet undiscovered but likely to exist are included in the tables. It is further shown that the proposed classification permits a systematic arrangement of all the more than 1000 nuclear reactions known.

E. Gora

11-26-59

SARKISOV, E. S.
USSR/Chemistry - Crystal Lattice

Card 1/1

Authors : Sarkisov, E. S.
Title : The Energy of a Crystal Lattice and the Structure of the Atom.
Periodical : Zhur. Fiz. Khim. Vol. 28, Ed. 4, 627-636, Apr 1954
Abstract : The application of BORN equations for calculating the energy of crystal lattices in which there is a continuous migration of ion bonds to the auxiliary valence is described. Sixteen references; tables; graphs.
Institution :
Submitted : May 13, 1953

5(2)

SOV/89-5-5-7/27

AUTHORS:

Sarkisov, E. S., Chebotarev, N. T., Nevzorova, A. A.,
Zver'kov, A. I.

TITLE:

The Oxidation of Zirconium at High Temperatures and the
Structure of the Primary Oxide Films (Okisleniye tsirkoniya
pri vysokikh temperaturakh i struktura pervichnykh oksidnykh
plenok)

PERIODICAL:

Atomnaya energiya, 1958, Vol 5, Nr 5, pp 550-553 (USSR)

ABSTRACT:

The investigation was carried out with two different layers
of zirconium. In the first case, a small zirconium plate
(dimensions: 8 . 15 . 0,5 mm) was used, which was produced
by hot rolling. The plate was then annealed for one hour
at a temperature of 700°C. Before oxidation the plate was
chemically polished in a solution of 40 % nitric acid, 5 %
hydrofluoric acid, and 55 % water.
Oxidation took place in steam and dry oxygen at temperatures
of from 150 to 800°C and under atmospheric pressure.
The time of exposure varied between 15 minutes and 10 hours.
By means of the scattering method the electrograms were
taken on an electronograph of the type EM-4.

Card 1/3

SOV/89-5-5-7/27

The Oxidation of Zirconium at High Temperatures and the Structure of the Primary Oxide Films

In the second case the zirconium foils were produced by evaporation of the zirconium in a vacuum on a mica base. The foils produced were removed from the mica base in distilled water. Oxidation was carried out as described above. The radiographic investigations were carried out by means of a camera of the type RKU-86 (Cr radiation). It was found that oxidation develops in stages. During the first stage of oxidation a thin layer with a marked textured cubic modification and characterized by very considerable passivation forms. The second stage is characterized by the occurrence of a textured monoclinic modification, which is located above the cubic modification. A further increase of the thickness of the foil is possible only at the expense of the increase of the internal monoclinic modification. The third stage of oxidation is characterized by the vanishing of the textured black oxidation layer which consists of the cubic and monoclinic modifications. The black layer goes over into a white one. At this instant the rate of oxidation of zirconium increases very considerably.

Card 2/3 The resistance to corrosion of the black layer might be

The Oxidation of Zirconium at High Temperatures and the Structure of the
Primary Oxide Films

SOV/89-5-5-7/27

brought into connection with the presence of a textured solid solution of zirconium in ZrO_2 . It was possible to show that the protective properties of the black layer apparently vanish as soon as a maximum of saturation of this solid solution with oxygen is attained. The consequence is that a non-textured white zirconium oxide with the well-known stoichiometric composition is formed. There are 6 figures, 2 tables, and 6 references, 0 of which is Soviet.

Card 3/3

18.8300

S/081/61/000/020/051/089
B107/B101

AUTHORS: Sarkisov, E. S., Sentyurev, V. P., Pogodin, V. P.
TITLE: Intercrystalline corrosion of OX18H9T (OKh18N9T) steel in water at high temperatures
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1961, 260, abstract 201156 (Sb. "Korroziya reaktorn. materialov". M., Atomizdat, 1960, 145 - 148)

TEXT: The standard method (AM(AM) method, ГОСТ 6032-50 (GOST 6032-50)) for testing the tendency of steels to form intercrystalline corrosion is suitable in water at high temperatures of 300 - 350°C. The method AM ГОСТ 6032-58 (AM GOST 6032-58) yielded negative results when testing OX18H9T (OKh18N9T) steel for intercrystalline corrosion in water at pH 3.2 - 7.0, 360°C, and 200 atm during 4000 hr. [Abstracter's note: Complete translation.]

Card 1/1

AUTHOR: Sarkisov, E.S. S/076/60/034/02/025/044
B010/B007/

TITLE: Change in the Lattice Parameters of Solid Solutions With Composition and the Vegard Rule

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 2, pp 432-439 (USSR)

ABSTRACT: In articles already published (Refs 1-3) the author had calculated the atomic radii and interatomic spacings in crystals and alloys, for which purpose he used a semi-empirical equation (derived on the basis of representations of the electron gas). In the present case the applicability of this calculation method for the purpose of measuring the lattice parameters of solid solutions in dependence on component concentration is investigated. Vegard (Ref 16) had assumed a linear dependence of the change in lattice parameters on composition in the formation of a continuous series of solid solutions. The most accurate measurement results, however, show that the additivity principle applies only in rare cases, and that the Vegard rule is, in principle, of no particular value for solid solutions. For the representation of the curves of the changes in the lattice parameters with composition, an equation is in the present case derived for bounded and unbounded solid solutions. The dependence of the course taken by the curve on the electron structure of the atoms of the alloy component, as well as on the difference in the

Card 1/2

Change in the Lattice Parameters of Solid Solutions
With Composition and the Vegard Rule

S/076/60/034/02/025/044
B010/B007

crystal structure of solid solutions and their components is determined. The sign and the order of the deviation of lattice parameters from the Vegard rule can be determined. A comparison between the calculated and experimentally determined values of the deviation of lattice parameters from the law of additivity (Table) for some alloys shows good agreement. Reference is made in the text to a paper by A.F. Kapustinskiy and E.L. Feynberg. There are 1 figure, 1 table, and 34 references, 10 of which are Soviet.

SUBMITTED: May 29, 1958

Card 2/2

SARKISOV, E. S.

36

PHASE I BOOK EXPLOITATION

SOV/5256

Gerasimov, Valentin Vladimirovich, ed., Candidate of Chemical Sciences.

Korroziya reaktornykh materialov; sbornik statey (Corrosion of Nuclear-Reactor Materials; a Collection of Articles) Moscow, Atomizdat, 1960. 284 p. 3,700 copies printed.

Ed.: A.I. Zavodchikova; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for mechanical and metallurgical engineers as well as for scientific research workers concerned with the construction of nuclear reactors.

COVERAGE: The water corrosion of various types of stainless steel and alloys under high pressures and temperatures is investigated from the point of view of the use of these materials for the construction of nuclear reactors. Attention is given to the following: the use of oxygen for protecting steel against corrosion, the behavior of steel in high-temperature

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31

SOV/5256

Corrosion of Nuclear- (Cont.)

water with various compositions, factors of metal stress corrosion, intergranular corrosion, the mechanism of corrosion cracking, and the corrosion resistance of aluminum and zirconium alloys. Conclusions based on test results are included. No personalities are mentioned. Most of the articles are accompanied by references. Of 238 references 87 are Soviet.

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AND ELECTROCHEMICAL CORROSION AT
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5

Gulyayev, V. N., and P. A. Akol'zin. Methods of Testing the Corro-
sion-Creep Strength of Metals at High Pressures and Temperatures
Card 2/9

Corrosion of Nuclear- (Cont.)

SOV/5256

3

Environment and the State of the Metal

120

Gerasimov, V. V., A. I. Gromova, and E. T. Shapovalov.
Corrosion Cracking of the 1Kh18N9T Steel

139

PART IV. INTERGRANULAR CORROSION

145

Sarkisov, E. S., V. P. Sentyurev, and V. P. Pogodin. Inter-
granular Water Corrosion of the OKhN9T Steel at High Tem-
peratures

145

Gerasimov, V. V., and K. A. Popova. Intergranular Water
and Steam Corrosion of the 1KhN9T Steel at High Temperatures
and Pressures

148

Card 6/9

S/076/63/037/002/012/018
B101/B186

AUTHOR: Sarkisov, E. S. (Moscow)
TITLE: Coordination number and interatomic distances in metallic and covalent crystals
PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 2, 1963, 396-405

TEXT: Based on earlier papers (Dokl. AN SSSR, 58, 1337, 1645, 1947; *ibid.*, 60, 371, 1948), which give an equation for calculating the interatomic distance d in metals and binary alloys, an equation is derived which describes the relation between d and the coordination number k of the lattice. This equation is:
$$d = c \left\{ p^{1/3} [(z_1 - f_1)^{2/3} - z^{2/3}]^{1/3} + (1 - p)^{1/3} [(z_2 - f_2)^{2/3} - z^{2/3}]^{1/3} + k^{1/9} [pf_1 + (1 - p)f_2]^{2/9} \right\} / [pf_1 + (1 - p)f_2]^{1/3}$$
, where c is $d_{H-H_{met}(k=1)}$
 $= 0.96 \text{ \AA}$ for the metal lattice, and $d_{H-H_{cov}(k=1)} = 0.71 \text{ \AA}$ for the

Card 1/3

Coordination number and ...

S/076/63/037/002/012/018
B101/B186

covalent lattice. Z is the atomic number of the element, p the atomic part, f the number of valence electrons, and z the number of the 4f electrons. A table shows the atom radii calculated for hydrogen in metallic and covalent bonds. The d calculated are compared with those found experimentally for 35 metals with the coordination numbers 8 and 12 and for 46 alloys with $k = 6, 8$, or 12 having a body-centered or face-centered lattice. In 50% of the metals, the discrepancy does not exceed $\pm 2\%$, in 30% not $\pm (3-5)\%$, except K, Rb, Cs, Ca, Sr, Ba, Tl and Th, where the deviation reaches 6-12%. In the alloys, the deviation does not exceed $\pm 5\%$, in 65% not $\pm 2\%$. Moreover, the calculated d values are compared with the experimental values for 22 metals with hexagonal crystallization, $k = 12$. In 75%, the deviation does not exceed $\pm 1\%$. In C (diamond), Si, Ge, and Sn crystallizing as tetrahedrons, $k = 4$, significant deviations are observed, since, d takes an intermediate position between d_{cov} and d_{met} as a function of the degree α of covalency.

$\alpha = (d_{H-H_{met}(k=1)} - d_{(H-H)_x}) / (d_{H-H_{met}(k=1)} - d_{H-H_{cov}(k=1)})$ is derived for

α and the α calculated for 14 elements and 14 solid hydrides of transition

Card 2/3

Coordination number and ...

S/076/63/037/002/012/018
B101/B186,

metals are indicated. In the latter the metallic binding is dominant. The calculation method suggested permits a quantitative prediction of the character of a bond. There are 1 figure and 7 tables.

ASSOCIATION:

Institut tonkoy khimicheskoy tekhnologii im. M. V.
Lomonosova (Institute of Fine Chemical Technology imeni
M. V. Lomonosov)

SUBMITTED:

November 24, 1961

Card 3/3

SARKISOV, E.S. (Moscow)

Coordination number and interatomic distances in metal and
covalent crystals. Zhur.fiz.khim. 37 no.2:396-405 F '63.
(MIRA 16:5)

1. Institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.
(Coordination compounds) (Metal crystals) (Crystal lattices)

$$TSP(b) = 2/EWT(1)/EWT(m)/EWA(c)/EWP(b)/T/EWP(L)$$

UP/0020/65/161/005/1093/1095

ACCESSION NR: APO011532

AUTHORS: Sarkisov, E. S.

1974. Interatomic distances of lanthanides in metallic crystals

DOI: 10.1002/anie.201705000

Card 1/3

L 5:262-65

ACCESSION NR: AP5011532

$d_{H-H_{MET}(k=1)}$ is the proportionality factor, numerically equal to the "metallic" interatomic distance of hydrogen with a coordination number $k = 1$ ($d_{H-H_{MET}(k=1)} = 1.21 \text{ \AA}$), Z is the atomic number, f is the metallic valence, n is the number of $4f$ electrons participating in the contraction effect, and λ is the coordination number of the lattice. With this equation the author computes the interatomic distances of the rare earths in metallic systems, and these are compared with experimental data. The author also computes the interatomic distances of the rare earths in the intermetallic compounds, and these are compared with experimental data. The author also computes the interatomic distances of the rare earths in the intermetallic compounds, and these are compared with experimental data.

ASSOCIATION: Institut tonkoy khimicheskoy tekhnologii im. N. V. Lomonosova
(Institute of Fine Chemical Engineering)

Card 2/3

L. 12202-65

ACCESSION NR: AP5011532

SUBMITTED: 12Oct64

ENCL: 00

SUB CODE: SS, IC

NO REF SOV: 006

OTHER: 004

Card 3/3 *ms*

SARKISOV, E.S.

Valence states and interatomic distances in metal crystals
of seventh period elements. Dokl. AN SSSR 166 no.3:627-630
Ja '66. (MIRA 19:1)

1. Institut tonkoy khimicheskoy tekhnologii im. M.V.
Lomonosova. Submitted April 7, 1965.

KULIGADE, K. N.; HAZAROV, H. P. ;
KADYMOV, YA. B.; BARKISOV, G. A.

Petroleum - Refining

Power characteristics of petroleum refining installations and their application in
standardizing specific electric energy consumption. Trudy Energ. inst. AN Azer. SSR
No. 10, 1951

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED

SARKISOV, G.A.(Moskva); SMIRNOVA, G.I.(Moskva); STEKOL'NIKOV, I.S.(Moskva)

Processes in the development of the strengthening effect in
an arced-over gap with voltage of commercial frequency. Izv.
AN SSSR. Otd.tekh.nauk. Energ. i avtom. no.5:44-50 S-0 '60.
(MIRA 13:11)

1. Laboratoriya vysokovol'nogo gazovogo razryada Energeticheskogo
instituta AN SSSR.
(Electric arc) (Electrodes)

S/169/62/000/009/055/120
D228/D307

AUTHORS: Andreyev, L. I., Bayramov, P. S., Nazarenko, O. V.
and Sarkisov, G. A.

TITLE: Marine electric prospecting (Discourse theses)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 41, ab-
stract 9A273 (In collection: Sostoyaniye i perspekti-
vy razvitiya geofiz. metodov poiskov i razvedki pol-
ezn. iskopayemykh, M., Gostoptekhizdat, 1961, 379-380)

TEXT: The method of executing various modifications of marine
electric prospecting is described. The perfecting of developed ty-
pes of equipment led in 1957 to the creation of an ЭPCM-57 (ERSM-
57) marine electric prospecting station. Results, which correspond
well with seismic surveying and drilling data and were obtained by
the method of continuous axial dipole sounding (CADS) and map pro-
filing, are mentioned. At present, marine electric prospecting
can be employed: 1) for reconnaissance surveys in order to seek
anticlinal structures (continuous axial profiling and CADS); and

Card 1/2

Marine electric prospecting ...

S/169/62/000/009/055/120
D228/D307

2) to solve some problems connected with the study of the arched parts of anticlinal folds (CADS and map profiling). [Abstracter's note: Complete translation.] ✓

Card 2/2

SHAPIROVSKIY, N.I. [deceased]; SARKISOV, G.I.

Combined geological surveying of the bottom of the sea. Razved.
1. okn. med. 51 no. 1:44-48. Ya '55. (MIRA 18:3)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po dobyche
nefti.

YEFREMEENKO, Vsevolod Pavlovich; SARKISOV, G.I., redaktor; SOKOLOVA, M.A.,
redaktor; RAKOV, S.I., ~~tekhnicheskii~~ redaktor

[Mechanic for portable compressor units] Mashinist peredvizhnykh
kompressornykh ustanovok. Izd. 2-oe, ispr. 1 dop. Moskva, Vses.
uchebno-pedagog. izd-vo Trudrezervizdat, 1955. 207 p. (MIRA 9:1)
(Air compressors)

Biblio

SARKISOV, G.A.; ANDREYEV, L.I.

Results and possibilities of marine electric prospecting in
the Caspian Sea. Sov.geol. 5 no.12:100-114 D '62. (MIRA 16:2)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po
dobyche nefi.

(Caspian Sea region—Electric properties)

SARKISOV, G.B.; PESIN, L.M.; OSETSKIY, V.F.; RABINOVICH, S.S.,
nauchn. red.; SHABALIN, Yu.P., red.

[Mechanisms, devices and power tools for assembly work; a
handbook] Mekhanizmy, prispособleniia i mekhanizirovannyi
instrument dlia montazhnykh rabot; spravochnoe posobie.
Moskva, Stroiizdat, 1965. 212 p. (MIRA 18:12)

SIVCHIKOVA, M.G. [Syvchykova, M.H.], kand. tekhn. nauk; KRIVONOSOVA, N.T.
[Kryvenosova, N.T.]; SARKISOV, G.G. [Sarkisov, H.H.]; SYCHEVSKAYA, M.I.
[Sychevs'ka, M.I.]

Ways to eliminate the "cold crack" in faience. Leh. prom. no.1:68-
69 Ja-Mr '65. (MIRA 18:4)

SARKISOV, G. Kh.

Sarkisov, G. Kh. "On the causes for the decrease in the amenability of stumps to prosthesis," (Report), - In index: G. Z. Sarkisov, Trudy III Zakavkazsk. s"yezda khirurgov, Yerevan, 1949 (on cover: 1949), p. 161-162

SO: U-5240, 17 Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

SARKISOV, G.Kh., professor; BUNYATOV, N.N.; MURADOVA, G.A.

Late amputations in postwar injuries. Khirurgia no.4:79
Ap '54. (MLRA 7:6)

1. Iz kliniki vosstanovitel'noy khirurgii Bakinskogo nauch'no-
issledovatel'skogo instituta ortopedii i vosstanovitel'noy
khirurgii.

(WOUNDS AND INJURIES,

*gunshot, of extremities, amputation)

(AMPUTATION,

*extremities, in gunshot wds.)

SARKISOV, G.Kh., Professor. (Severo-Osetinskaya ASSR, Ordzhonikidze, ul. Sovetov, d.3)

Technic of intramedullary nailing of closed fractures of the femur. Vest.khir.74 no.7:76-77 O-N '54. (MLRA 8:10)

1. Iz kafedry obshchey khirurgii (zav.-prof. G.Kh.Sarkisov) Severo-Osetinskogo meditsinskogo instituta.
(FEMUR, fractures,
intramedullary nailing)
(FRACTURES,
Femur, intramedullary nailing)

SARKISOV, G.KH, Prof.

Stab and cut wound of the heart and lung. Vest.khir.75 no.6:
112-113 J1 '55. (MLRA 8:10)

1. Iz kafedry obshchey khirurgii (zav.--prof. G. Kh.Sarkisov)
Severo-Osetinskogo meditsinskogo instituta G. Ordshonikidze
(Severo-Osetinskaya ASSR), Pavlovskiy per., d.5, kv.2.

(HEART, wounds and inj.

stab & cut, surg.)

(LUNG, wounds and inj.

same)

(WOUNDS AND INJURIES

heart & lungs, stab & cut wds, surg.)

SARKISOV, G. M.

AID P - 200

Subject : USSR/Engineering
Card : 1/1
Author : Sarkisov, G. M.
Title : Computed Pressure for Concrete Casings. (Discussion)
Periodical : Neft. khoz., v. 32, #3, 5-10, Mr 1954
Abstract : The author discusses two articles on the same subject published by A. A. Linevskiy and T. E. Yerimenko (Neft. khoz., #5, 18 and #7, 8, 1953) concerning the computation of vertical and horizontal stresses on concrete casings and some errors in early published equations.
Institution : Azerbaydzhan Scientific Research Inst. (Az NII) State Petroleum Research Inst. (GINI)
Submitted : No date

SARKISOV, Georgiy Martynovich; AMENZADE, YU.A., redaktor; GONCHAROV, I.A., redaktor

[Some problems in the calculation of casing pipes] Nekotorye voprosy rascheta obsadnykh kolonn. Baku, Aznefteizdat, 1955. 97 p.
(Petroleum engineering) (MLRA 9:3)

SOV/124-57-3-3691

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 149 (USSR)

AUTHORS: Sarkisov, G. M., Chernysheva, Ye. V.

TITLE: On the Problem of the Actual Tensile Loads Acting on Casing Columns
During Lowering (K voprosu o fakticheskikh rastyagivayushchikh
nagruzkakh, deystvuyushchikh na obsadnyye kolonny pri spuske)

PERIODICAL: Tr. Azerb. n.-i. in-ta po dobyche nefti, 1955, Nr 2, pp 93-100

ABSTRACT: Bibliographic entry

Card 1/1

SARKISOV, G.M.

More about the calculation of pressure for casings. Neft.khoz. 34
no.5:14-15 My '56. (MLRA 9:8)
(Oil well drilling--Equipment and supplies)

SARKISOV, G.M., professor.

Simplified method for determining collapse pressures for casings.
Azerb.neft.khoz. 35 no.10:47-48 0 '56. (MIRA 10:1)
(Petroleum engineering) (Oil well drilling--Equipment and supplies)

SOV/124-58-3-3470

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 126 (USSR)

AUTHOR: Sarkisov, G. M.

TITLE: More Accurate Calculated Loads Can Assist in Lightening Steel Well Casings (Utochneniye raschetnykh nagruzok kak put' k oblegcheniyu kolonn obsadnykh trub)

PERIODICAL: V sb. : Uproshcheniye i oblegcheniye konstruktsiy skvazhin. Moscow, Gostoptekhizdat, 1957, pp 48-56

ABSTRACT: Bibliographic entry

Card 1/1

SARKISOV, G.M.

SHERSHOVA, F.M., inzhener; SARKISOV, G.M., inzhener; SEMENOV, N.I., inzhener.

Protecting railroads from washouts. Put' 1 put. khoz. no.7:22-23
Jl '57. (MLRA 10:8)

(Soviet Central Asia--Railroads)

SARKISOV, G.M.

Methods for determining critical pressure for casing pipes.

Izv.vys. ucheb. zav.; neft' i gaz 3 no.8:33-38 '60.

(MIRA 14:4)

1. Kuybyshevskiy industrial'nyy institut imeni V.V.Kuybysheva.
(Oil well casing)

SARKISOV, G.M.

Resistance of casing pipes to external pressure. Neft.khoz. 38
no.5:19-24 My '60. (MIRA 13:8)
(Oil well casing)

SARKISOV, G.M.

Stability characteristics of casing pipes. Neft. khoz. 39 no.9:
19-23 S '61. (MIRA 15:1)
(Oil well casing)

SARKISOV, Georgiy Martynovich; LATUKHINA, Ye.I., vedushchiy red.; NUKHINA,
E.A., tekhn. red.

[Calculating casing pipes and columns] Raschety obsadnykh trub i kolonn.
Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961.
242 p. (MIRA 14:7)

(Oil well casing)

SARKISOV, G.M.; SEMAGIN, F.K.

Studying the strength of aluminum alloys used in the manufacture of
drill pipes. Izv.vys.ucheb.zav.; neft' i gaz 5 no.8:95-100 '62.
(MIRA 17:3)

1. Kuybyshevskiy industrial'nyy institut im. V.V.Kuybysheva.

SARKISOV, G.M.; SEMAGIN, F.K.

Investigating the static and fatigue strength of AC, D16,
and V95 aluminum alloys. Trudy VNIIBT no.12:28-47 '64. (MIRA 18:4)

SARKISOV, G.M.

Calculating casing strings; reply to an article by O.A. Lebedev.
Neft. khoz. 42 no.6:17-19 Je '64. (MIRA 17:8)

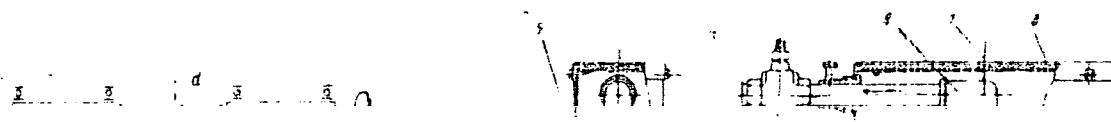
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CIA-RDP86-00513R001447210009-3

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001447210009-3"



ISUPOV, Yu.G.; GORUSTOVICH, A.M.; SARKISOV, G.M.

Pumping petroleum products from underground reservoirs. Transp. i
khran. nefti i nefteprod. no.8:12-14 '65. (MIRA 18:9)

1. Nauchno-issledovatel'skiy institut po transportu i khraneniyu
nefti i nefteproduktov.

SARKISOV, Georgiy Minasovich; SURODEYEV, V.P., inzh., red.; MEDVEDEVA,
M.A., tekhn. red.

[Overall repair of buildings and structures; experience of
the Tashkent road crew] Kompleksnyi remont zdaniy i sooruzheniy;
opyt kollektiva Tashkentskoi dorogi. Moskva, Transzheldorizdat,
1962. 22 p. (MIRA 15:11)
(Railroads--Buildings and structures)

SARKISOV, G.S.

Dike belt of the Nichbashskaya ore deposit. Trudy Uz.geol.
upr. no.1:86-92 '60. (MIRA 14:8)
(Kurami Range—Geology)

SARKISOV, I.

"Character of upper and lower layers of rock in Kladno mines."
Uhli, Praha, Vol 4, No 4, Apr. 1954, p. 121

SO: Eastern European Accessions List, Vol 3, No 10, Oct 1954, Lib. of Congress

SARKISOV, I. B.

Capital repair of oil wells Baku, Aznefteizdat, 1944. 139 p. (50-40955)

TN871.S25

AMIROV, A. D., OVNATANOV, S. T., and SARKISOV, I. B.

"General Overhauling of Oil and Gas Wells," Baku, 1953

XXX

COAL OF T A

4. In the case of the coal of T A, the rate of dequicing increased with the temp. and the CO content in the gas phase. The content of Fe_2O_3 was reduced from about 20 to 4-6% in the process of dequicing. The process is characterized by the fact that the content of Zn is less than 5%.

Sarkisov, I.G.

137-58-5-9300

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 73 (USSR)

AUTHOR: Okunev, A.I., Sarkisov, I.G., Vil'yamov, V.M.

TITLE: Employment of Metallic Reducing Agents in Order to Intensify the Process of Zinc Removal from Slags (Intensifikatsiya obes-tsinkovaniya shlakov putem primeniya metallicheskih vosstanoviteley)

PERIODICAL: Byul. Tsent. in-t inform. M-va tsvetn metallurgii SSSR, 1957, Nr 2, pp 17-19

ABSTRACT: A discussion of the possibilities of increasing the efficiency of the process of fuming of slags by means of employing metallic reductants; the results of experimental shop tests performed at the Krasnoural'sk plant are shown. It is recommended that metallic Fe (scrap, chips, etc.) be employed as a reductant.

G.S.

1. Slags--Processing 2. Zinc--Separation 3. Iron--Applications

Card 1/1

SARKISOV, I.G.

137-58-5-9299

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 73 (USSR)

AUTHORS: Okunev, A.I., Vil'yamov, V.M., Sarkisov, I.G.

TITLE: Results of Shop Experiments on Copper Extraction From Slags After Removal of Zinc and Reduction of Magnetite (Rezultaty zavodskikh opytov obezmezhivaniya shlakov posle ikh obeztsinkovaniya i vosstanovleniya magnetita)

PERIODICAL: Byul. Tsentr. in-t inform. M-va tsvetn. metallurgii SSSR, Nr 4, pp 19-22 - 1957

ABSTRACT: Investigations were carried out in order to find means of obtaining low-Cu waste slags following the extraction of zinc from converter slags and rich waste slags. It is shown that waste slags containing 0.4% Cu may be obtained when a matte phase containing 7.5-15% Cu is formed. The Cu and Au losses occurring during the process are reduced by 33 and 60 percent, respectively. The formation of a matte phase may be ensured by addition of lean matte or pyrite. The consumption of pyrite depends on the content of Cu in the original slag, as well as on the methods and timing of the charging process. The method described may be employed for the extraction of Cu from slags of lead and tin smeltings. 1. Slags--Processing 2. Copper G.S. --Production 3. Slags--Properties

Card 1/1

137-58-6-12024

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 120 (USSR)

AUTHORS: Okunev, A.I., Sarkisov, I.G., Vil'mov, V.M.

TITLE: Fuming of Zinc-bearing and Sulfide-oxide Melts. Possibilities for Intensification of the Process (F'yurningovaniye tsinksoder-zhashchikh i sul'fidno-okisnykh rasplavov i vozmozhnosti intensifikatsii etogo protsessa)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 16, pp 16-20

ABSTRACT: Thermodynamic computations show that the reduction of Zn from sulfide compounds, with the aid of CO or C, proceeds at a rate 1/6 to 1/8 that of reduction of Zn from oxide compounds. It is for this reason that in the process of pyroselection the sulfides are initially subjected to air blowing without fluxes, after which the fused oxides are subjected to fuming. However, since any matte, a 20% one for example, contains 6.5-7.5% of O₂ even before the blowing, and since the reduction blowing employs a mixture of air with a reductant, the O₂ content in the sulfide melt is increased. Thus, during blowing of a sulfide-oxide melt the concentration of Zn vapors in the gases is not determined by the reaction between the CO + CO₂ and the

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Fuming of Zinc-bearing and Sulfide-oxide Melts. (cont.)

sulfides but rather by a reaction with the melt; one may, therefore, expect a more efficient distillation of Zn than would be the case in reactions between CO and C and the sulfides. In order to verify this deduction, pilot-plant experiments were performed in a converter containing up to 5 tons of melt. The experiments demonstrated that it is possible (in principle) to drive the Zn from the sulfide-oxide melts. The possibility of intensifying the distillation of Zn by means of a reaction in which Zn is displaced from Cu-sulfide was also investigated. For this purpose a quantity of liquid blister Cu was introduced into the converter after a short period of blowing. Experiments have shown that the rate of distillation of Zn from the matte may be increased by 2.5-4 times in the process and that the Zn content in the melt can be reduced from 6-7% to 1% within an interval of 30 minutes.

A.P.

1. Zinc--Separation
2. Slags--Processing
3. Slags--Thermodynamic properties
4. Slags--Chemical reactions
5. Carbon monoxide--Chemical reactions
6. Carbon dioxide--Chemical reactions

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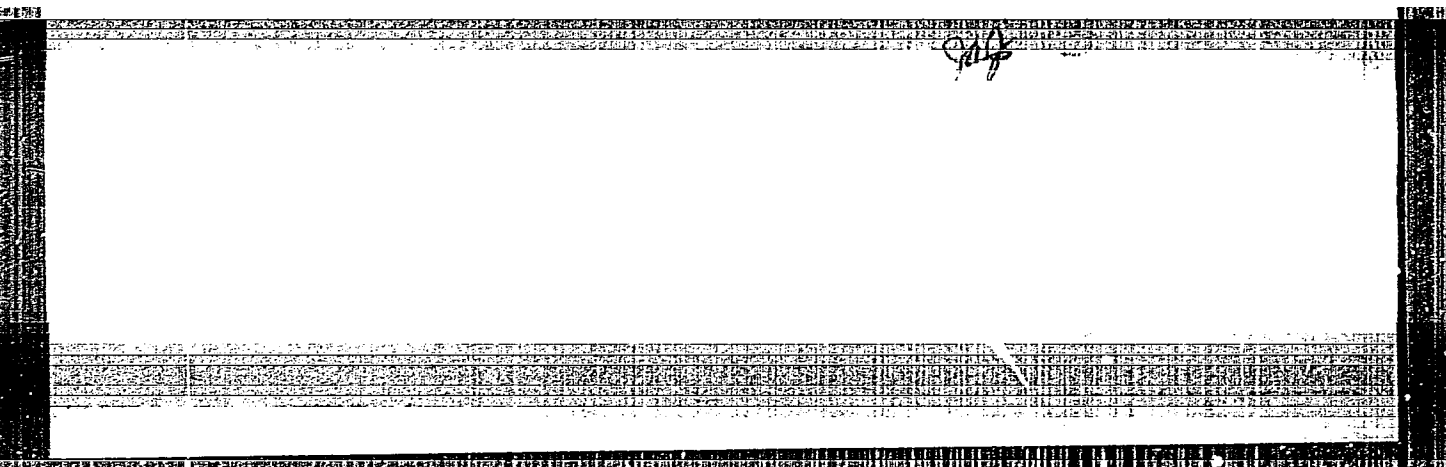
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BABADZHAN, Artem Aleksandrovich; MAL'TSEV, Boris Vasil'yevich; TSEYDLER, A.A., doktor tekhn. nauk, prof., retsenzent; SARKISOV, I.G., inzh., retsenzent; VERTENKO, Ye.A., red.; SYRCHINA, M.M., red.izd-va; TURKINA, Ye.D., tekhn. red.

[Production of blister copper] Proizvodstvo chernovoi medi; uchebnoe posobie dlia podgotovki kvalifitsirovannykh rabochikh na proizvodstve. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 352 p. (MIRA 14:12)
(Copper--Metallurgy)

DIYEV, N.P. [deceased]; YELISEYEV, I.S.; KOCHNEV, M.I.; PADUCHEV, V.V.;
VERMENICHEV, S.A.; SARKISOV, I.I.; MAL'TSEV, B.V.; KUSAKIN, P.S.

Use of oxygen in bessemerizing copper mattes in industrial
converters. Trudy Inst.met.UFAN SSSR no.3:93-101 '59.
(MIRA 13:4)

(Copper--Metallurgy)

(Oxygen--Industrial applications)

SARKISOV, I.K.

Closely spaced multi-electrode system for general investigation of wells. Izv.vys.ucheb.zav.; neft' i gaz 1 no.9:11-16 '58.

(MIRA 11:12)

1. Azerbaydzhanskiy industrial'nyy institut imeni M.Azizbekova.
(Oil well logging, Electric--Equipment and supplies)

SARKISOV, I. K., Candidate Tech Sci (diss) -- "Some problems of the telemetering of depth parameters in complex geophysical investigations of oil wells". Baku, 1959. 13 pp (Min Higher Educ USSR, Azerb Order of Labor Red Banner Industrial Inst im M. Azizbekov), 150 copies (KL, No 23, 1959, 168)

SOV/152-59-2-26/32

6(), 25(5)
AUTHORS:

Litvinov, S. Ya., Sarkisov, I. K.

TITLE:

On the Theory of Using Tubes as Electrical Connecting Channels
(K teorii ispol'zovaniya trub kak elektricheskogo kanala
svyazi)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz,
1959, Nr 2, pp 99 - 105 (USSR)

ABSTRACT:

At present there are to be found, both in the USSR and in foreign countries, a number of publications dealing with the question of how to form a connecting channel between the bottom of the bore hole and the surface. The description of a wireless electrical connecting channel for measuring the speed of turbo-drills (Ref 1) is very interesting. Such a system would render it possible not only to determine the number of revolutions of turbo-drills but also to measure other parameters as well as to carry out complicated geophysical investigations of the bore holes in the course of drilling. In the paper under consideration the authors studied the potential over the length of the tube and determined the potential differences between the tube at the

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On the Theory of Using Tubes as Electrical Connecting Channels

SOV/152-59-2-26/32

mouth of the well and the electrode attached at the distance 1. Considering the whole system as a long line it is basically possible to determine the potential distribution along the tube. However, the electrode potential cannot be determined on the surface, since the problem of a distortion of the electric field of a point source in the presence of a conducting cylinder in the field has not yet been solved. In some cases, i.e. if the electrode is assumed to be infinitely distant, the potential difference between the points M and N can be determined if the potential is created in the points A and B. In table 1 the transmission of the signal from the bottom to the surface is shown schematically. The formula

$$\Delta U = U_N - U_M$$

has been found for the potential difference between the points M and N. U_N and U_M are determined by means of the formulas (6) and (7):

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On the Theory of Using Tubes as Electrical Connecting Channels

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$$\int_0^L \frac{e^{-kx}}{x_1 - x} dx = e^{-kL} A [\bar{Ei}(kL_A) - Ei(kr_A)] \quad (6)$$

$$U_{n_1} = \frac{J_0 \cdot k \cdot \rho}{4\pi(e^{kL} - e^{-kL})} \left\{ e^{kr_{n_1}} [-Ei(-kr_{n_1}) + Ei(-kL_{n_1})] + e^{-kr_{n_1}} [\bar{Ei}(kL_{n_1}) - \bar{Ei}(kr_{n_1})] \right\} \quad (7)$$

The potential difference determined by formula (2) is a complicated function of parameters characterizing the tube, the bore hole, the position of the electrodes, and the rock. In a certain object all parameters with the exception of the length of the tube remain constant, or they change but inconsiderably during the drilling operation. From theoretical investigations it can, for the time being, be concluded that the use of tubes as electrical connecting

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On the Theory of Using Tubes as Electrical Connecting
Channels

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channels is possible in bore holes of 1000 to 1500 m depth in the case of low specific resistance of the surrounding rocks, and to greater depths in the case of rocks with a high specific resistance. A final opinion on the applicability of such connecting channels will only be possible after more complete experimental investigations have been carried out. There are 4 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Azerbaydzhanskiy industrial'nyy institut im. M. Azizbekova
(Azerbaydzhani Industrial Institute imeni M. Azizbekov)

SUBMITTED: October 31, 1958

Card 4/4

SARKISOV, I.K.; MAKHMUDOVA, V.M.

Oil and gas well electric logging theory. Izv. vys. ucheb. zav.;
neft' i gaz 3 no.8:17-20 '60. (MIRA 14:4)

1. NIPI Neftekhimavtomat (for Sarkisov).
2. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova (for Makhmudova).
(Oil well logging, Electric)

Sarkisov, I. V

Kapital'nyy remont neftyanykh i gazovykh skvazhin (General overhauling of oil and gas wells, by) A. D. Amirov, S. T. Gynatanov i I. V. Sarkisov. Baku, Gostoptekhnizdat, 1953.

311 p. illus., diagrs., tables.

"Literatura": p. (310)

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SARKISOV, I.Z.

Applications of species non-specific sera in hypertension. Sovet. med.
16 no.12:29-31 Dec 1952. (CML 23:4)

1. Head Physician of Vnukovo Sanatorium, Moscow Oblast.

SARKISOV, Ivan Zakharovich; ALEKSANDROV, F., red.; USTINOVA, S.,
tekhn. red.

[Relax in the Moscow environs; handbook on rest homes and
sanatorium] Otdykhaite v Podmoskov'e; spravochnik o domakh
otdykha i sanatoriakh. Moskva, Mosk.rabochii, 1962. 191 p.
(MIRA 15:9)

(Moscow region--Labor rest homes)
(Moscow region--Sanatoriums)

USSR/Electronics - Organizations

Aug 52

"In the OIR (International Radio Broadcasting Organization)," Kh. Sarkisov

"Radio" No 8, p 18

Proceedings of the 11th Ordinary Session of the General Assembly, the 21st Congress of the Admin Council, and the 6th Congress of the Tech Commission. The Chinese representative stated that the number of radio stations in China had doubled

226r23

in 1951 compared with 1949 and the number of transmitters had tripled. Gives appointees to Admin Council, titles of speeches, and dates of future meetings.

226r23

SARKISOV, Kh.

MELIK-SHAKHNAZAROV, A.M.; MEL'NIKOV, A.G.; ORLOV, G.L.; SARKISOV, K.A.

Multichannel remote-control measuring device with double amplitude modulation for geophysical investigations of wells on a single cable. Izv. vys. ucheb. zav.; neft' i gaz 6 no.10:87-91 '63. (MIRA 17:3)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.

L 53731-65 EWT(d)/EWT(1)/EEC(k)-2/EEC-4/EEC(c)-2/EED-2 Pn-4/Pq-4/Pac-4/Pac-2

ACCESSION NR: AR5002391

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621.398

SOURCE: Ref. zh. Avtomat., telemekh. i vychisl. tekhn. Sv. t., Abs. 10A311

34
B

AUTHOR: Orlov, G. D.; Sarkisov, K. A.

TITLE: Problem of noise immunity of a geophysical multichannel telemetering frequency-division system

CITED SOURCE: Uch. zap. Kom-t vyssh. i sredn. spets. obrazovaniya Sov. Min. AzerSSR. Mekhan., mashinostr., energ., elektrotekhn., avtomatiz., vychisl. tekhn., v. 9, No. 1, 1964, 1190126

TOPIC TAGS: telemeter, telemeter system, frequency division telemeter, noise immunity, geophysical measurement

TRANSLATION: New methods of geophysical drillhole exploration necessitate a multichannel telemeter system with a dynamic range of over 1000. Noise immunity is provided by a frequency-division method (the latter is derived from a stabilized oscillator the latter is placed in the drillhole instrument). Sensor

Card 1/3

SARKISOV, K.G.

Some data on the effect of nitroglycerin and thermal stimulants on the capillary blood circulation in elderly and senile persons; preliminary report. Vop. geron. i geriat. 4:91-94 '65. (MIRA 18:5)

1. Otdel vozrastnykh izmeneniy vnutrennikh organov Instituta gerontologii AMN SSSR, Kiyev.

SARKISOV, L.A.

SARKISOV, L.A.

Expanding a tunnel profile of an operating subway line. Transp.
stroil. 7 no.8:14-16 Ag '57. (MIRA 10:12)

1. Zamestitel' nachal'nika stroitel'no-montazhnogo upravleniya
(SMU-7) - 7 Moskovskogo metrostroya.
(Moscow--Subways) (Tunneling)

SARKISOV, M. A.

USSR/Electricity - Hydroelectric Stations Jul 51

Transmission

"The Construction of the Volga Hydroelectric Stations - A New Stage in the Development of Soviet Power Engineering," M. A. Sarkisov, Eng'r, Mosenergo

"Elektrichestvo" No 7, pp 5-11

Discussion of tech problems involved in the construction of the Kuybyshev and Stalingrad hydro-elec power stations. About half the power of these stations will be transmitted to Moscow,

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USSR/Electricity - Hydroelectric Stations (Contd) Jul 51

900-1,000 km away. A 220-kv transmission line from the Kuybyshev and Stalingrad stations will interconnect the power systems of the lower Volga (Kuybyshev, Saratov, Stalingrad, and Astrakhan systems) and a 400-kv transmission line will interconnect the latter with the power systems of Moscow and the Cen Black Earth Region.

199714

SARKISOV, M. A.

SARKISOV, M. A. Construction and operation of powerful modern hydroelectric power stations; public lecture. Moskva, Znaniye, 1953. 23p. (Vsesoyuznoe obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znanii. Seriya 4, no 1) (53-35301)

H39. V62 no. 1

631.311.31.
2351. THE KULBYSHEV HYDROELECTRIC POWER STATION IN
SERVICE AT FULL PROJECT CAPACITY. M. A. Sarkisov.
Energetik (Moscow), 1958, No. 1, 1-5. In Russian.

The last of the 20 generators, each of 105 MW capacity, was
commissioned in the autumn of 1957. The water head has reached
its projected value and the equipment has stood up well to the stress.
Some design and manufacturing faults which have been found and
corrected are described, e.g. the turbine thrust-bearing supports
had to be reinforced, the babbitting of the generator bearings had
to be improved, moisture ingression in the circuit-breaker insul-
ation prevented and the travel of the moving contacts eased. Experi-
ments with novel excitation arrangements have been successful.

and 11 generators are equipped with machine exciters, capable of
raising the exciter voltage to 4 times its rated value within
0.04-0.05 sec. 9 other generators are provided with rectifier
excitation reaching the same ceiling within one cycle or 0.02 sec.

F. Busemann

SARKISOV, M.A., inzh.

New design of the RGH-57 gas relay. Elek.sta. 29 no.11:61-62
N '58. (MIRA 11:12)

(Electric switchgear)

SARKISOV, M.A., inzh.

Corrosion and fouling of metal underwater structures of
hydroelectric power stations. Gidr: stroi. 30 no.9:30-32
S '60. (MIRA 13:9)

(Corrosion and anticorrosives)
(Volga Hydroelectric Power Station--Hydraulic structures)
(Mollusks)

SARKISOV, M.A., inzh.; CHERNIKOV, G.B., inzh.

System for ionic excitation of large generators driven
by hydraulic turbines. Elek.sta. 31 no.5:31-37
My '60. (MIRA 13:8)

(Turbogenerators)